

# CLIMATE NEWS

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## Climate Change Accelerates Hybridization of Native and Invasive Trout



The rapid spread of hybridization between a native species and an invasive species of trout in the wild is strongly linked to changes in climate, according to a new study published in *Nature Climate Change*. The study was based on 30 years of research by the U.S. Geological Survey (USGS); University of Montana; and Montana Fish, Wildlife and Parks. Experts long have predicted that climate change could decrease worldwide biodiversity through cross-breeding between invasive and native species, but this study is the first to directly support this assumption. Researchers found that decades of stream temperature warming and decreases in spring flow contributed to the spread of hybridization between native westslope cutthroat trout and introduced rainbow trout across the Flathead River system in Montana and Canada. Relative to cutthroat trout, rainbow trout prefer these climate-induced changes and tolerate greater environmental disturbance. "Climatic changes are threatening highly prized native trout as introduced rainbow trout continue to expand their range and hybridize with native populations through climate-induced 'windows of opportunity,' putting many populations and species at greater risk than previously thought," said USGS scientist Clint Muhlfeld. (*Great Falls Tribune*/nclimate2252)

## EPA Proposes Cutting Carbon Pollution from Coal Plants

On Monday, the EPA proposed to cut carbon dioxide emissions from existing coal plants by up to 30 percent by 2030 compared with 2005 levels, taking aim at the nation's leading source of greenhouse gases (GHGs). The standard is one of the most significant steps the federal government has ever taken to curb the nation's GHG emissions, which are linked to climate change. Under the draft rule, the EPA would let states and utilities meet the new standard with different approaches mixing four options including energy efficiency, power plant upgrades, shifting from coal to natural gas, and investing in renewable energy. Other compliance methods could include offering discounts to encourage consumers to shift electricity use to off-peak hours. "This proposal is all about flexibility. That's what makes it ambitious, but achievable," said EPA Administrator Gina McCarthy. "For the sake of our families' health and our kids' future, we have a moral obligation to act on climate." The EPA said that for every \$1 invested to comply with the standard, Americans would reap \$7 in health benefits. It also said that even without counting the public health benefits—which could be as much as \$93 billion—the climate benefits would make the proposed regulations worthwhile, saving about \$30 billion in 2030. (*WaPo*)

## Pope Francis: Destroying the Earth is a Sin

Pope Francis made the biblical case for mitigating the effects of climate change, speaking to a massive crowd in Rome last month. "Safeguard Creation," he said, "because if we destroy Creation, Creation will destroy us! Never forget this!" "Creation is not a property, which we can rule over at will; or, even less, is the property of only a few: Creation is a gift, it is a wonderful gift that God has given us, so that we care for it and we use it for the benefit of all, always with great respect and gratitude," Francis said. "But when we exploit Creation we destroy the sign of God's love for us, in destroying Creation we are saying to God: 'I don't like it! This is not good!' 'So what do you like?' 'I like myself!' – Here, this is sin! Do you see?" The remarks concluded a six-day conference at the Vatican, where scientists, economists, philosophers, and legal scholars met to discuss what the Church could do to address the issues caused by climate change. (*MSNBC*)

## Extreme U.S. and U.K. Winters Linked to Greenhouse Gases

The severe snowstorms that battered much of the U.S. and the U.K.'s wettest winter in almost 250 years were at least partially caused by rising greenhouse-gas emissions, according to University of Oxford climate physicist Tim Palmer, whose findings were published last month in *Science*. Rising sea temperatures in the tropical Western Pacific also exacerbated last year's typhoon season including Haiyan, which killed more than 6,000 people in the Philippines, and heat waves in Australia, said Palmer. As the climate warms, more heat is trapped in the ocean, leading to additional moisture in the region's air ending up in the jet stream. This positioned the jet stream to dump more snow and rain on North America and Europe. "The sea temperatures in that crucial region of the west Pacific, which are some of the warmest ocean temperatures anywhere in the world, have reached these all-time record warmings through an additional effect, which is man-made climate change," said Palmer. "The water's already warm there, and it's just taken it over the brink to create conditions last winter and into this spring that were unprecedented." (*Bloomberg/science.1255147*) *Sheldon*